

**METHOD AND APPARATUS FOR REDUCING IMPURITIES  
IN CELLULOSE FIBERS FOR MANUFACTURE OF FIBER  
REINFORCED CEMENT COMPOSITE MATERIALS**

Abstract of the Disclosure

A method of manufacturing high purity fiber cement grades of cellulose fibers is described. Additional washing steps, coupled with an elevated temperature, are used in the process to extensively wash the pulps and remove substantially all COD components remaining in the pulps. The pulps are counter-currently washed by diffusion and dewatering at elevated temperatures following the brown stock washer systems. During the additional washing steps, the pulps are soaked in counter-current heated water for a pre-determined time and some chemicals may be introduced to chemically break down the COD components in the pulps and to make them more soluble in the aqueous solution. The additional washing steps can be performed using existing equipment at conventional pulp mills. A formulation and a process of making fiber reinforced cement composite materials are also described using the low COD and high purity cellulose fibers. The pulps with lower COD contents have superior performance in manufacture of fiber reinforced cement composite materials. A smaller amount of the low COD and high purity fibers is needed to achieve the same reinforcement efficiency, compared to regular cellulose fibers.

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